

Outcrop Study of the Lower Cretaceous (Albian) Chinkeh Formation, Liard Basin, northeastern British Columbia, Canada

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Cretaceous strata of the Lower Albian Chinkeh Formation were deposited in the Liard Basin of northeastern British Columbia. Deposition of the Chinkeh Formation took place within a transgressive systems tract, which can be inferred from lateral distribution of facies assemblages.

The Chinkeh Formation lies unconformably on tilted Mesozoic and Paleozoic strata deposited during inundation of the Arctic Ocean from the North. Interpreted depositional systems include; delta front, lower shoreface to offshore transition, tidal channel, and sandy intertidal deposits.

At the outcrop scale, the Chinkeh Formation consists of one coarsening upward succession containing decimeter-scale sedimentary structures. Two separate *Glossifungites* surfaces exist, at the base and top of the coarsening upward succession. The *Glossifungites* surfaces are characterized by burrows of the *Skolithos* ichnofacies, backfilled by coarser-grained sands. The Chinkeh sands range from very fine to medium-grained quartz arenites, which are bioturbated by horizontal traces of the *Zoophycos* ichnofacies and the vertical traces of the *Skolithos* ichnofacies. The sands consist of a multitude of physical sedimentary structures including: swaley cross-stratified sands, wavy bedding, mega-ripples, and climbing ripples. The Chinkeh sands are bounded above by a maximum marine flooding surface, representing a relative rise in sea level terminating deposition of the Chinkeh sands within the study area.

The integration of Ichnology with physical sedimentary structures has proven to be a powerful tool in the interpretation, delineation and accurate prediction of depositional environments.